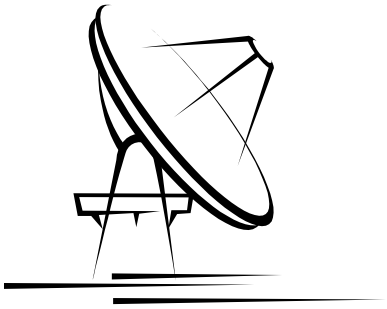

TECHNICAL INFORMATION

Wednesday, May 4, 2005

TIME: 12:00 p.m. – 2:00 p.m. CT

TEST TIME: 11:30 a.m. – 12:00 p.m. CT

SATELLITE: IA-6 (formerly TELSTAR – 6)
BAND: C-BAND
TRANSPONDER: 16
CHANNEL: 16
POLARITY: HORIZONTAL
AUDIO: 6.2 / 6.8 MHz
LOCATION: 93° WEST LONGITUDE
FREQUENCY: 3800 MHz

TECHNICAL TROUBLE NUMBER (Day of the program only)
(724) 337-1808

Please remember that if you are having difficulties with the technologies, on the day of the conference you are encouraged to call the number listed above. This will connect you with someone at the station in Pittsburg who will be able to help you with the technology issues.

About the Presenters

Skip Stahl

Skip Stahl is one of the founders of CAST, the Center for Applied Special Technology in Wakefield, Massachusetts, and is currently CAST's Director of Technical Assistance. Skip has extensive leadership experience in the application of Universal Design for Learning to instructional practice in both K – 12 and postsecondary settings. He has consulted with software and curriculum publishers in accessible product design and is the featured presenter in the video "Skip Stahl on Technology and Students with Special Needs" one of the five-part award-winning series, "Technology in Today's Classrooms" produced by Canter & associates.

Skip chaired the National File Format Technical Panel for the US Department of Education and led the consensus-building to identify the *National Instructional Materials Accessibility Standard.* He is presently Project Director for the National Instructional Materials Accessibility Standard (NIMAS) Development Center. Skip is the author of over twenty articles published in peer-reviewed, popular and trade publications, and contributes a regular technology column to *Counterpoint*, a publication of the National Association of Directors of Special Education (NASDSE). He is a consultant to a number of national elementary, secondary and higher education initiatives focused on Universal Design for Learning. He received a B.A. in English Literature and an M.S. from Bank Street College of Education.

Joy Smiley Zabala

Dr. Joy Zabala is a general and special educator who currently serves as an independent consultant and professional developer and trainer. She works with families, schools, other educational organizations, and universities and is a frequent presenter at state, national, and international conferences. She is the developer of the SETT Framework (http://www.joyzabala.com), a tool that helps collaborative teams identify concerns and seek solutions that promote student achievement and may or may not include assistive technology devices and services. She is a founding member of the QIAT Consortium and has been instrumental in the development and validation of Quality Indicators for Assistive Technology Services. (http://www.qiat.org)

Joy is a faculty associate at the Center for Technology in Education at Johns Hopkins University, an online advisor for the Commonwealth Center for Instructional Technology and Learning at the University of Kentucky, and the project director and evaluator for ATSTAR, a systematic online curriculum that teaches campus-based teams how to collaboratively consider, select, and use assistive technology. Will serve as the president of the Technology & Media Division of the Council for Exceptional Children for the 2005-2006 term. Joy also serves as a member of the board of directors for the Alliance for Technology Access, the TAM representative on the organizational board of the European Schools Association, and the program coordinator for the Assistive Technology Industry Association 2006 Conference. She holds a Bachelor of Education from the University of Florida, a Master of Education from Florida Atlantic University, and a doctorate from the University of Kentucky.

Skip Stahl
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Assistive and Universally-Designed Instructional Technologies to Meet the Needs of All Learners

Skip Stahl, M.S.
Director of Technical Assistance
Center for Applied Special Technology (CAST)

Joy Zabala, Ed.D.
Assistive Technology Professional Developer and Consultant

Skip Stahl
CAST

Big Ideas for the Session

- **Assistive Technology and Universal Design**
- **Examples of UDL and AT**
- **Expanding Opportunities to Learn**
- **Impact of UDL and AT on Education**
  - Implications for Teaching
  - Implications for IEP Teams
  - Implications for Large Scale Assessments
  - Implications for Learning

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Definitions in Federal Statute: AT Device

. . . any item, piece of equipment or product system… that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.

. . . Exception: The term does not include a medical device that is surgically implanted , or the replacement of such device.

IDEA, 2004 P.L.108-446,
Section 602(1)(a)(b)

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Definitions in Federal Statute: AT Service

... any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.

Public Law 108-446, Section 602

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Definitions in Federal Statute: Universal Design

...A concept or philosophy for designing and delivering products and services that are unable by people with the widest possible range of functional capabilities which include products and services that are directly usable (without requiring assistive technologies) and products and services that are made usable with assistive technologies.

AT Act of 1998, P.L. 105-394, S. 2432

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Assistive Technology and Universal Design

- items that “improve, maintain, or enhance functional capabilities”
- Range from “Low Tech to “High Tech”

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Assistive Technology and Universal Design

- The term "functional capabilities" is very important, as is the educational environment and the activities
- Assistive Technology (AT) is not defined by disability category, but by need…

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Functional Areas of Potential Need

- **Reading**
- **Written Expression**
- **Math**
- **Problem-solving**
- **Communication**
- **Daily organization**
- **Specific task-related skills**
- **Seating/Positioning**
- **Hearing**
- **Seeing**
- **Mobility**
- **Behavior**
- **Self-Care**
- **Recreation**

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Assistive Technology and Universal Design

- Building in support for diverse needs is called "Universal Design"

- In learning environments, this approach assumes that students with varying needs will be involved in learning, and that the goals, instructional practice, instructional materials and assessments need to address this diversity.

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Assistive Technology and Universal Design

- Accommodations created for a subset of the population usually result in increased benefits for everyone
- In learning environments, this approach assumes that students with varying needs will be involved in learning, and that the goals, instructional practice, instructional materials and assessments need to address this diversity

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Assistive Technology and Universal Design

- Assistive Technology looks at the specific barriers a student may face in whatever environment they find themselves
- Universal Design looks to make the learning environment as flexible and accommodating as possible
- Both approaches strive to insure the access, participation & progress of students with disabilities.

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The SETT Framework

The SETT Framework : Student, Environment, Task, & Tools

The Student
- The person who is the central focus of the educational process and for whom everyone involved in any part of the educational program is an advocate

The Environments
- The customary environments in which the student is (or can be) expected to learn and grow

The Tasks
- The specific things that the student needs to be able to do or learn to do to reach expectations and make educational progress

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The SETT Framework

The Tools

- Everything that is needed by the student and others for the student accomplish the tasks in the places where they need to be done so that educational progress is achieved
  - Devices
  - Services
  - Strategies
  - Accommodations
  - Modifications
  - Etc.

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The SETT Framework

Critical Elements

- Shared Knowledge
- Collaboration
- Communication
- Multiple Perspectives
- Pertinent information
- Patience
- Flexibility
- On-going Processes

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Examples of AT and UDL

- The Life Cycle of Seeds

- Kirsten, a first grade teacher in Boston, MA, used this UDL lesson as part of her unit to teach the life cycle of plants in two forty-five minute sessions. Her class includes 21 students of diverse abilities including some students with identified learning disabilities, several students who receive extra literacy support, and one English Language Learner.

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AT & UDL Can Employ “Low Tech” Solutions

- Everything from strategies to pencil grips to





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Examples of AT and UDL

- Sometimes, “High Tech” solutions are simply more efficient, economical & scalable

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Examples of UDL and AT

… with accessible core materials, students can use a variety of AT devices & software

Input Methods and Devices
- On-Screen Keyboard
- Cursor Control-Pointer Systems
- Alternative Keyboards
- Voice Recognition
- Eye-Gaze
- Keyboard Emulation
- Switches
  - Direct Switch Interface
  - Scanning
  - Morse Code
  - Auditory

Output Methods and Devices
- Visual
- Auditory
- Tactile
- Interfacing
- Combinations

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NIMAS and the Opportunity to Learn

- The National Instructional Materials Accessibility Standard (NIMAS) provides a foundation for increased opportunity for all students

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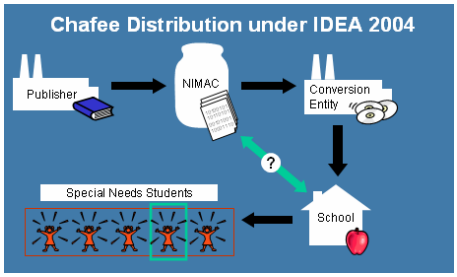
NIMAS and the Opportunity to Learn



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NIMAS and the Opportunity to Learn

NIMAS has the potential to significantly increase the impact and use of assistive technologies…

Potential Impact of NIMAS, UDL, and AT on Education

- Implications for Teaching
- Implications for IEP Teams
- Implications for Large Scale Assessments
- Implications for Learning

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In Summary

- Assistive Technology looks at the specific barriers a student may face in whatever environment they find themselves
- Universal Design looks to make the learning environment as flexible and accommodating as possible
- Both approaches strive to insure the access, participation & progress of students with disabilities.

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"Where there was once an observer, let there now be a participant."

- Eliot Eisner

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Universal Design for Learning

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Universal Design for Learning: Frequently Asked Questions

Q 1: How can Universal Design for Learning (UDL) improve students' access to the general curriculum?

Each learner, with or without identified disabilities, presents a unique pattern of skills, interests, and needs. In the United States, reauthorizations of the federal Individuals with Disabilities Education Act (IDEA) have cited the need to adjust various aspects of curriculum and instruction to meet these individual differences and thus ensure access to the general curriculum; yet traditional curriculum materials and methods are not inherently amenable to adjustment.

The only practical and affordable way to implement the requirements of IDEA is to provide flexible materials that are accessible to different kinds of learners. Because learning is not just a question of access to materials, clear strategies for adjusting learning goals, teaching methods and materials, and assessment methods are necessary. Professional training in individualizing learning is needed as well.

The cornerstone of Universal Design for Learning is flexibility. The UDL approach leverages the inherent flexibility of digital media to support individualized learning. UDL concepts form the basis of the development of adjustable materials, instructional approaches, assessment methods, and professional development that can meet IDEA's call for access to the general curriculum for students with disabilities.

Back to Top

Q 2: What is the difference between physical and cognitive access to the general curriculum?

Broadly speaking, physical access to the curriculum includes sensory and motor access (such as the ability to see text and images, hear sound and speech, and manipulate materials and expressive tools). Individuals with physical or sensory disabilities may encounter barriers when using traditional materials such as books, paper and pencil, keyboards, audiotapes without text equivalents, or videos lacking captions or audio descriptions.

Examples of cognitive access to the general curriculum include the ability to understand assignments, plan approaches to and execute tasks, use materials effectively, comprehend content presented in various media, organize work, understand and use feedback, and express ideas effectively. All learners (but especially those with learning disabilities, attention deficits, developmental disabilities, or affective difficulties) may encounter barriers when instructional materials are not designed in a flexible manner.

Students need both physical and cognitive access in order to succeed in the general curriculum. A student with a learning disability may be able to see text clearly (physical access) but may have difficulty understanding the assignment or purpose for reading, finding main points, organizing notes, and expressing understanding (cognitive access). Conversely, a student with cerebral palsy may fully understand an assignment and have clear ideas for executing it (cognitive access), but be blocked from expressing those ideas by inappropriate tools (physical access).

Back to Top

Q 3: How has the mandate for access to the general curriculum changed the role of the special educator?

Traditionally, the role of the special educator has been distinct from the role of the general educator, with the special educator focusing on remedial instruction of skills rather than on curricular content, often in a separate physical setting. Both IDEA and UDL support a new role for special educators. IDEA specifies that "joint participation and leadership of general and special educators in curriculum standards development, professional development, resource allocation, and instruction are critical in helping students with disabilities access the general education curriculum...."

Because IDEA mandates access to the general curriculum and the attainment of goals connected to curriculum standards for students with disabilities, special educators will now work collaboratively with general educators to customize the general curriculum to meet the needs of students with disabilities. Not coincidentally, special educators may also collaborate with general educators to customize goals, materials, methods, and assessment for students without identified disabilities. Each learner has unique strengths, weaknesses, interests, and needs, and the skills of the special educator can assist the general educator in helping all students reach curricular goals.

Back to Top

Q 4: What barriers need to be removed from current general curriculum materials to make them accessible for all learners?

The single most significant barrier in the general curriculum is the fixed medium of presentation. For example, printed materials, the most pervasive means of providing materials, cannot be modified from their original format, nor can the information provided this way be enhanced or made more supportive for diverse learners. Videotapes, audiotapes, and even some software are also generally fixed in their presentation, making them accessible and appropriate learning tools for some, but not for all.

The presentation of curricular materials and tools in digital, networked form is the first step in overcoming the barrier of fixed media. Digital form is necessary because it provides the underlying flexibility needed for customization. When digitized, text, images, sound, and video can be converted into other accessible forms at the teacher's or learner's request. This capacity to be transformed, and to be presented in multiple forms simultaneously, is unique to digital media.

Networked form is necessary because it provides the following:

- the opportunity for students to access their curricular materials and projects from multiple sites (at school, at home, while traveling, in multiple classrooms)
- the possibility of ongoing, embedded assessment (with student processes and student work collected in one place, and feedback offered on an ongoing basis)
- a wide variety of content, supporting varied student interests
- vast information resources, and multiple ways to access that information to support different learners' modes of finding information
- supports, such as online dictionaries, thesauri, and encyclopedias, and the ability to have text read aloud, to provide scaffolding for students with difficulties and to expand information and ideas for all students.

However, simply providing materials in digital form does not guarantee the flexibility of use needed to truly individualize learning. This flexibility must be built in by software and curriculum designers so that materials are truly adaptable and can be used by teachers to individualize goals, methods, and assessment.

Back to Top

Q 5: What are the differences between assistive technology and Universal Design for Learning?

Children with physical or language disabilities may need properly designed wheelchairs, adaptive switches to control their environment, speech synthesizers, and other assistive devices. Assistive technologies will always have a role in the education of learners with

disabilities, and Universal Design for Learning will not eliminate the need for personal assistive devices.

However, exclusive emphasis on assistive technologies places the burden, one of adaptation, on the learner-not the curriculum. The idea that students must procure or be prescribed special individual tools whenever they cannot use standard curricula undermines learning for everyone. Exclusively print-based tools and methods, uncaptioned videos and software, images and posters that lack text descriptions-all create a culture of failure for many of our children. UDL curriculum materials assume diverse learner goals, learner profiles, and assessment methods, and therefore are designed with flexibility as their keystone. UDL materials offer options to transform content presentation and provide multimedia presentation, options for varied learning supports and modes of student expression, and varied means of building student engagement. Instead of one assumed standard with variations, variations comprise the standard.

As UDL becomes more viable and pervasive, the power of assistive technology can be devoted to providing more efficient interaction with a curriculum that is already access-aware. For the students who need it, assistive technology will no longer be required to overcome barriers in a poorly-designed curriculum, but will enhance active interaction with a curriculum that has been designed at the outset to be accessible to all.

Back to Top

Q 6: How can technology help teachers individualize teaching materials to make learning engaging and challenging for all students?

Technology tools, if designed according to the Web Accessibility Initiative (WAI) and UDL guidelines, can be created to support the individualization necessary to engage all learners, as illustrated by the following examples.

Pam, a student with learning disabilities for whom English is also a second language, uses CAST's eReader software to help her complete a reading assignment. eReader's spoken voice and synchronized highlighting features help her track words on a page, pace her reading, and associate the way a word looks with the way it sounds. After reading the story several times with the spoken voice option turned on and the highlighting speed set to slow, she turns the read aloud feature off, increases the highlighting speed slightly, and reads the story again. In this manner, she works gradually to increase her reading comprehension and speed.

Seth, a student with low vision whose word comprehension skills are excellent, uses eReader to adjust the font, style, size, and color of digital text, background, and highlighting, to achieve maximum contrast and readability.

Jeremy, a poor speller who does not enjoy writing, uses the auditory feedback offered by Don Johnston's Write:OutLoud software to engage in the task of writing an English composition. As he types his composition and it is displayed on the computer screen, the

program reads it aloud by word, sentence, paragraph, or letter-by-letter, helping him to identify sentence construction problems and spelling mistakes. When he misspells a word, it flashes on the screen, indicating his error. Using the program's talking spell checker, he calls up a list of suggested words to replace the misspelled word, and, in the case of homonyms, short definitions to distinguish one word from another. Jeremy selects a word when its pronunciation (or definition) indicates it is the correct word, and completes the composition without spelling errors.

Daniel, whose physical disabilities prevent him from using a mouse or a computer keyboard, uses Ke:nx software with Write:OutLoud to gain single switch access to program controls and an onscreen keyboard. In this way, he too can access the writing supports of the program to help him complete his written work.

Ellen, an eighth-grade student with learning disabilities, finds it challenging to utilize the rich resources of the Internet because there is so much information to look at and so many visual distracters. But finding and organizing information from the Web is getting easier for her since her school installed CAST's eTrekker software on its library computers. She signs on, opens eTrekker, and types in a research question such as *What did Harriet Tubman do in the Civil War as a nurse?* eTrekker checks Ellen's spelling and identifies the keywords in her question, such as *Harriet Tubman*, *Civil War*, and *nurse* . Ellen presses the search button and eTrekker lists ten websites that match her search criteria. eTrekker's interface presents a search engine environment free of distracting advertisements and extraneous information. Ellen selects a few sites to visit, goes to those sites, and, using the reading supports of eReader, which she has also opened on her computer, selects the read feature to have information read aloud to her. eTrekker keeps her research question and keywords on the screen, helping her to maintain focus on the nursing aspect of Tubman's life, rather than her role in the Underground Railroad. Ellen highlights and pastes information into the onscreen notepad and generates some of her own notes on the topic. When she finishes her Internet search, eTrekker stores her research question and keywords, the websites she has visited, and her notes so that she can easily retrieve them.

Back to Top

Q 7: How can the Internet and multimedia be used to individualize learning for students with varied backgrounds, learning styles, abilities and disabilities?

The flexibility of digital media and the varied resources available on the World Wide Web provide great opportunity for individualization. However, care must be taken to structure any learning experience so that the focus remains on the particular goal at hand. This requires preparation and careful consideration of each learner's needs and skills.

Example: A seventh-grade science class, with the help of their teacher, uses Engaging Minds' Inspiration software, a concept mapping program, to create a ‘launch pad' of selected web sites to use when researching the topic of whales. Inspiration enables this diverse group of seventh-grade students, with varied abilities and preferences, to work

together to fulfill the goal of the assignment: to find out the best place in the world to film whales for an upcoming movie, and how much such a project might cost. One student, a reluctant reader who does poorly in print-based assignments, excels when it comes to interpreting the data presented in maps and graphs depicting whale migratory patterns. Another student's math skills come to the fore as she analyzes how much it will cost to get a crew to the Gulf of Maine to film humpback whales in action. As the students gather their data, they weave their separate findings into a cohesive whole using Inspiration. When their research is complete, another student uses his visual talents to present the group's findings in a dazzling PowerPoint presentation.

Back to Top

Improving Access to Instructional Materials for Students with Disabilities

FACT SHEET

The National Instructional Materials Accessibility Standard (NIMAS) is:

- A method for publishers and others to develop accessible materials quickly and accurately using a flexible electronic format,
- A way to address longstanding information access barriers and enrich learning experiences for students with print disabilities,
- A standard endorsed by the U.S. Department of Education,
- An approach promoted and implemented by two CAST-based centers supported by the U.S. Department of Education,
- A minimum subset of content features recognized worldwide and known as the ANSI/NISO Z39.86 2002 (or DAISY/NISO) standard.

When NIMAS is implemented, what will be the outcome?

A textbook developed using NIMAS will consist of a collection of valid source files created by K-12 curriculum publishers. From these files, accessible, student-ready versions (i.e., braille, Digital Talking Book, large print, etc.) can be produced.

Why is NIMAS needed?

Students with print disabilities often do not have timely access to textbooks and other curricular materials. NIMAS will streamline the provision of accessible materials. The American Printing House for the Blind's National Instructional Materials Access Center (NIMAC) will make distribution more efficient. Timely access to high-quality materials will create equal opportunities for students' participation and progress within the general curriculum.

Who Developed the Standard?

A forty-member national panel including publishers, educators, disability advocates, and technologists came to a consensus regarding the NIMAS requirements. The landmark agreement promises improved access and expanded learning opportunities for students.

What are CAST's NIMAS Development and Technical Assistance Centers?

CAST is a nonprofit education research and development organization dedicated to using innovative technologies to make education more accessible and effective for all learners. In 2002, the National Center on Accessing the General Curriculum, led by CAST, convened the expert panel that drafted the first version of NIMAS. Following the success of this group, CAST entered into two five-year cooperative agreements with the U.S. Department of Education's Office of Special Education Programs (OSEP) to further eliminate barriers to the general curriculum for students with disabilities. The NIMAS Development Center and the NIMAS Technical Assistance Center have been established as a result.

The NIMAS Development Center will work to improve the existing NIMAS standard and explore distribution models.

Activities include:

- Identifying new technologies and education research that will make NIMAS a more effective standard for developing universally designed, multiple-output formats in a cost-effective, timely manner,
- Building and supporting the capacity of its partner, the NIMAS Technical Assistance Center, to implement the adoption of NIMAS by states and other entities,
- Exploring free-market distribution models that could increase the quality, quantity, and timely delivery of accessible materials.

The NIMAS Technical Assistance Center will advise key stakeholders including publishers, states, and other entities, on efficient production and distribution of NIMAS files and raise awareness of the need for accessible materials.

Activities include:

- Planning and evaluating technical assistance to improve the delivery of accessible materials to students and teachers,
- Providing technical assistance to publishers, states, and other entities for a timely phase-in of NIMAS,
- Working with stakeholders to ensure the coordinated and effective implementation of NIMAS,
- Coordinating with the NIMAC to support the maintenance and delivery of NIMAS files,
- Disseminating information and resources about the benefits and availability of accessible digital materials.

Partners

- U.S. Department of Education, Office of Special Education Programs (OSEP)
- Assistive Technology Industry Association (ATIA)
- American Foundation for the Blind's (AFB) Textbooks and Instructional Materials Solutions Forum

NIMAS within IDEA 2004

Refer to:

- Section 612 (a)(23)
- Section 613 (a)(6)
- Section 674 (e)
- Title III, Section 306

Contact Information

NIMAS Development & Technical Assistance Centers
c/o CAST
40 Harvard Mills Square, Suite 3, Wakefield, MA 01880
Tel: 781.245.2212 TTY: 781.245.9320 Fax: 781.245.5212
http://nimas.cast.org nimas@cast.org

Methods & Materials Barrier Analysis Worksheet

Instructional Methods/Procedures	Nature of Potential Barrier Created by this Method or Procedure	Priority?
Lecture presentation		
View a videotape		
Answer "end-of-chapter" questions in writing (typically done as homework)		
Create a diagram illustrating key points		
Five essay question test		
Textbook (typically read as homework)		
Multiple choice test		
Optional		

Using the SETT Framework to Level the Learning Field for Students with Disabilities

Joy Smiley Zabala, Ed.D., ATP

The SETT Framework is a tool that helps teams gather and organize information that can be used to guide collaborative decisions about services that foster the educational success of students with disabilities. Originally developed to support assistive technology selection and use in educational settings, the principles of the SETT Framework have been used to guide decisions about a much broader range of educational services, and also, with minor adjustments, have been successfully used in non-educational environments and service plans.

SETT is an acronym for Student, Environments, Tasks and Tools. The SETT Framework is based on the premise that in order to develop an appropriate system of Tools (supports –devices, services, strategies, accommodations, modifications, etc.) teams must first develop a shared understanding of the student, the customary environments in which the student spends time, and the tasks that are required for the student to be able to do or learn to do to be an active participant in the teaching/learning processes that lead to educational success. When the needs, abilities, and interests of the Student, the details of the Environments, and the specific Tasks required of students in those environments are fully explored, teams are able to consider what needs to be included in a system of tools that is Student-centered, Environmentally useful, and Tasks-focused.

What questions does the team ask in each section of the SETT Framework?

As playwright Eugene Ionesco said, "It's not the answer that enlightens, but the question." This is true of the questions in the SETT Framework because they are expected to guide and deepen discussion rather than be complete and comprehensive in and of themselves. As each of these questions is explored, it is likely that many other questions will arise. The team continues the exploration until there is consensus that there is enough shared knowledge to make informed, reasonable decisions that can be supported by data.

The Student

- What is(are) the functional area(s) of concern? *What does the student need to be able to do that is difficult or impossible to do independently at this time?*
- Special needs (related to area of concern)
  Current abilities (related to area of concern)

The Environments

- Arrangement (instructional, physical)
- Support (available to both the student and the staff)
- Materials and Equipment (commonly used by others in the environments)
- Access Issues (technological, physical, instructional)

- Attitudes and Expectations (staff, family, other)

The Tasks

- What SPECIFIC tasks occur in the student's natural environments that enable progress toward mastery of IEP goals and objectives?
- What SPECIFIC tasks are required for active involvement in identified environments? (related to communication, instruction, participation, productivity, environmental control)

How is the S-E-T Information used to think about Tools?

In the SETT Framework, Tools include devices, services, strategies, training, accommodations, modifications–everything that is needed to help the student succeed. Some parts of the Tool system address the specific needs of the student, while parts of the Tool system may more specifically address issues in the Environments, such as access to the classroom, accessibility of instructional materials, support for staff that helps them develop and sustain learning environments that are inviting, challenging, and productive for ALL students, including those with the full range of abilities and special needs.

When determining what the needs to be in the system of Tools to support and increase the achievement of a student, team members analyze the information gathered on the Student, the Environments, and the Tasks to address the following questions and activities.

- Is it expected that the student will *not* be able to make reasonable progress toward educational goals without assistive technology devices and services?
- If yes, *describe* what a useful system of supports, devices, and services for the student would be like if there were such a system of Tools.
- Brainstorm specific Tools that could be included in a system that addresses student needs.
- Select the most promising Tools for trials in the natural environments.
- Plan the specifics of the trial (expected changes, when/how tools will be used, cues, etc.)
- Collect data on effectiveness.

Does use of the SETT Framework require using a specific process?

No. It must have the basic elements of an effective process, like those mentioned above, but SETT is a FRAMEWORK, not a protocol requiring a specific set of implementation practices for validity. It is important, however, to keep in mind that consistent processes are required for effective implementation: therefore, people are encouraged to imbed the use of the SETT Framework into existing processes (such as referral, IEP development, implementation planning, evaluation, etc.) or include it in the development of new, more effective processes when required. More will be said about processes

Because many people have requested examples of how the SETT Framework fits into various processes, brief guides and forms are being developed to provide a place to begin. Those guides and forms are known as SETT Scaffolds. In the building trade, a scaffold is used to support the integrity of a structure and also while it is being developed and also provide access to harder to reach parts of the structure. The SETT Scaffolds have a similar purpose. They provide teams with a place to begin and support the building of strong processes that are imbedded in or aligned to other processes that suit specific environments. During the development of personalized processes, the SETT Scaffolds help teams remember and attend to issues that might be missed without guidance. SETT Scaffolds, however, may also be used more permanently if appropriate references are maintained.

What are the critical elements of using the SETT Framework?

While the individual processes that a team uses to implement the SETT Framework will vary based on the particular phase of service delivery is being discussed and the particular challenges and facilitators of the environments in which it is being used, there are some critical elements that must ALWAYS be included. They are:

- *Shared Knowledge:* One of the major premises of the SETT Framework is that decisions about Tools–the devices and actions that are needed for the student and others to succeed–are most valid when they are made based not on the knowledge that one person has (or believes that they have) but based on an agreed-upon, mutually valid shared knowledge of the student, the environments, and the task.

- *Collaboration:* The SETT Framework is tool that both requires and supports the collaboration of the people who will be involved in the decision-making and those who will be impacted by the decisions. Collaboration is not only critical for the SETT Framework, it is also critical to gaining the buy-in necessary for effective implementation of any decisions.

- *Communication:* The SETT Framework requires that people communicate actively and respectfully. Shared knowledge can only be developed if the opinions, ideas, observations, and suggestions are respected and respectful.

- *Multiple Perspectives:* Everyone involved beings different knowledge, skills, experience, and ideas to the table. Although multiple perspectives can be challenging at times they are critical to the development of the accurate, complete development of shared knowledge. Not only are the multiple professional perspectives important to include, but also those of the student and the parents. This can make the difference between success and lack there-of.

- *Pertinent information:* Although there is much information that is pertinent to decision-making, there is other information that is not relevant. Knowing where to draw the line in important, but that line may well be a loving target.

- *Flexibility and Patience:* When working through the SETT Framework or using any other means of concerns-identification and solution seeking, there is a tremendous human tendency to suggest possible solutions before the concerns have been adequately identified. When a solution springs to mind, collaborators are urged NOT to voice it until it is time to talk about the Tools because when a solution is mentioned, the conversation shifts immediately from concern-identification to determining the worth or lack of worth of the suggested solution. Even when a team member thinks of the "perfect" solution, silent patience is urged. It might not look quite so perfect when all important factors are discussed.

- On-going Processes: Decision-making in educational settings involves ongoing processes. Whatever conclusions are reached at any point are only as valid as the evidence shows they have been successful in lowering barriers to student achievement. It is expected that the SETT Framework will be useful during all phases of assistive technology service delivery. With that in mind, it is important to revisit the SETT Framework information periodically to determine if the information that is guiding decision-making and implementation is accurate, up to date, and clearly reflects the shared knowledge of all involved.

Conclusion:

The SETT Framework supports a thorough yet simple approach to assistive technology assessment and intervention. When data is gathered and organized with simplicity, a team's ability to effectively generate a range of Tools that can be used to support student achievement is greatly enhanced. It is much more likely that the selected system of tools will enhance the student's abilities to address the tasks in which he/she is expected to build competency, thus making the tools more valuable. Equally, it is more likely that the people supporting the student will see the relevancy of using the Tools as the student grows in competence, confidence, and independence, and thus, be more active in encouraging and supporting the student's achievement through its use.

Using the SETT Framework as a guide, it is possible, from the start, to address and overcome many of the obstacles which lead to abandonment or "under-implementation" of Tools. When the Environment and the Tasks are fully explored and considered, the lament "Well, I tried that but it didn't work" is much less likely to be heard. Instead, students, parents, and professionals should all rejoice at the increased opportunities for success which come when Tools–devices, services, strategies, accommodations, modifications, training, etc.– are well matched to the student's needs and abilities to perform the natural tasks which are part of living and learning in this world.

ANNOTATED SETT SCAFFOLD FOR AT DECISION-MAKING
Collaboratively Gathering and Analyzing Information from a Variety of Sources

Student: _____ **Date:** _____ **Perspective:** _____

EXAMINING CURRENT CONDITIONS TO ESTABLISH EDUCATIONAL NEED		
STUDENT	**ENVIRONMENTS**	**TASKS**
INFORMATION RELATED SPECIFICALLY TO THE STUDENT, INCLUDING SPECIFIC AREAS OF CONCERN, SPECIAL NEEDS, CURRENT ACHIEVEMENT, INTERESTS, GOALS, ETC. ▪ Build shared knowledge about the student that can be used to identify need for tools, guide decisions about tools, and assist in planning implementation and evaluation of effectiveness. ▪ Determine what still needs to be known and how it can be found out. ▪ Add additional information as it becomes available through evaluation, implementation, or discussion	INFORMATION RELATED TO ANYONE WHO IS AROUND THE STUDENT OR ANYTHING THAT IS PROVIDED TO THE STUDENT. ▪ Build shared knowledge about the environments in which the student is, or can be, expected to learn and grow. This information can be used to identify need for environmental supports and training, and assist in planning implementation and evaluation of effectiveness. ▪ Determine what still needs to be known and how it can be found out. ▪ Add additional information as it becomes available through evaluation, implementation or discussion	INFORMATION SPECIFICALLY RELATED TO THE DETAILS OF THE TASKS THAT ARE CURRENTLY REQUIRED OF THE STUDENT OR WILL BE REQUIRED IN THE NEAR FUTURE. ▪ Build shared knowledge about the tasks that the student needs to do or learn to do that are currently difficult or impossible for the student to do at the expected level of independence. ▪ This information can be used to identifying the type of tools needed, but will also play a critical role in planning implementation and evaluation of effectiveness. ▪ Determine what still needs to be known and how it can be found out. ▪ Add additional information as it becomes available through evaluation, implementation, discussion.

- **CIRCLE FUNCTIONAL AREA(S) OF CONCERN**
- **UNDERLINE BARRIERS TO STUDENT PROGRESS**
- **STAR SUPPORTS FOR STUDENT PROGRESS**

SETT SCAFFOLD FOR AT DECISION-MAKING - PART I
Collaboratively Gathering and Analyzing Information from a Variety of Sources
(use as many sheets as necessary to build shared knowledge)

Student: _____ **Date:** _____ **Perspective:** _____

DESCRIBE CURRENT CONDITIONS TO ESTABLISH EDUCATIONAL NEED		
STUDENT	**ENVIRONMENTS**	**TASKS**

- **CIRCLE FUNCTIONAL AREA(S) OF CONCERN**
- **UNDERLINE BARRIERS TO STUDENT PROGRESS**
- **STAR SUPPORTS FOR STUDENT PROGRESS**

SETT SCAFFOLD FOR AT DECISION-MAKING - PART II

Develop Descriptors of an Assistive Technology Tool System that Addresses Needs and Identify Possible Tools

STUDENT: _____ **AREA OF ESTABLISHED NEED (See SETT: Part I):** _____

STEP 1: Based on S-E-T data, enter descriptors or functions needed by the student across the shaded top row - 1 descriptor per column
STEP 2: Enter promising tools in the shaded left column - 1 tool per row
STEP 3: For each tool, note matches with descriptors and functions to help guide discussion of devices and services
USE ADDITIONAL SHEETS IF NECESSARY

Descriptors ⇨									
Tools ⇩									

SETT SCAFFOLD FOR AT DECISION-MAKING - PART III

Establishing Availability and Training Needs for Promising Tools

SHORT LIST OF TOOLS	TOOL AVAILABILITY			SERVICES (training, planning, coordination, etc) REQUIRED FOR EFFECTIVE USE		
JUSTIFY CHOICES WITH SETT DATA AND DESCRIPTOR MATCH	S	P	A	STUDENT	STAFF	FAMILY

KEY: **S= Systemically available tools - Currently available to ALL students served by this system**
P= Programmatically available through special education services or other services for which identified student is qualified
A= Additional tools that need to be acquired for this student.

QUALITY INDICATORS
FOR ASSISTIVE TECHNOLOGY SERVICES

RESEARCH-BASED REVISIONS, 2004

The consideration of assistive technology (AT) devices and services is required during the development of every Individualized Educational Program (IEP) and every Individual Family Service Plan (IFSP) for children from birth to school age. The Individuals with Disabilities Education Act of 1997 (IDEA '97) requires that each team that plans for the education of a child with a disability document any AT devices and/or services the child may need. Despite this requirement, there has been no agreed upon description of high quality AT services by which schools can measure their compliance.

Since the summer of 1998, the Quality Indicators for Assistive Technology (QIAT) Consortium has focused its efforts on defining a set of descriptors that could serve as over-arching guidelines for quality AT services. The Consortium has attempted to develop descriptors that are applicable regardless of service delivery models. It is the belief of the Consortium that these descriptors can be used to guide:

1. School districts in the development and provision of quality AT services which are aligned to federal, state and local mandates;
2. AT service providers in the evaluation and improvement of their services;
3. Consumers of AT services in the selection of adequate AT services;
4. University faculty and professional development providers in the delivery of programs that develop knowledge and skills needed to offer quality AT services;
5. Leaders in the development of regulations and policies related to the use of AT in education.

When reviewing or using the Quality Indicators for Assistive Technology, it is important to be aware of some basic assumptions that pertain to all areas of QIAT. First, it is essential that ALL AT services developed and delivered by states or districts are legally correct according to the mandates and expectations of federal and state laws and are aligned to district policies. Second, AT efforts, at all stages, involve on-going collaborative work by teams which include families and caregivers, school personnel, and other needed individuals and service agencies. Third, multidisciplinary team members involved in AT processes are responsible for following the code of ethics for their specific profession.

Note: IDEA '97 requires that AT devices and services be provided for all children with disabilities who need them. This applies to children from birth to twenty-one years of age. In the following document, when the term IEP is used, the reader can assume that the indicator also applies to IFSPs unless otherwise indicated.

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Quality Indicators for Consideration of Assistive Technology Needs

Consideration of the need for AT devices and services is an integral part of the educational process identified by IDEA '97 for referral, evaluation, and IEP development. Although AT is considered at all stages of the process, the Consideration Quality Indictors are specific to the consideration of AT in the development of the IEP as mandated by IDEA '97. In most instances, the Quality Indicators are also appropriate for the consideration of AT for students who qualify for services under other legislation (e.g. 504, ADA).

1. **Assistive technology devices and services are considered for all students with disabilities regardless of type or severity of disability.**

   Intent: Consideration of assistive technology need is required by IDEA '97 and is based on the unique educational needs of the student. Students are not excluded from consideration of AT for any reason. (e.g. type of disability, age, administrative concerns, etc.)

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***2. During the development of the individualized educational program, the IEP team consistently uses a collaborative decision-making process that supports systematic consideration of each student's possible need for assistive technology devices and services.**

Intent: A collaborative process that ensures that all IEP teams effectively consider the assistive technology of students is defined, communicated, and consistently used throughout the agency. Processes may vary from agency to agency to most effectively address student needs under local conditions.

3. Quality Indicator: IEP team members have the collective knowledge and skills needed to make informed assistive technology decisions and seek assistance when needed.

Intent: IEP team members combine their knowledge and skills to determine if assistive technology devices and services are needed to remove barriers to student performance. When the assistive technology needs are beyond the knowledge and scope of the IEP team, additional resources and support are sought.

***4. Decisions regarding the need for assistive technology devices and services are based on the student's IEP goals and objectives, access to curricular and extracurricular activities, and progress in the general education curriculum.**

Intent: As the IEP team determines the tasks the student needs to complete and develops the goals and objectives, the team considers whether assistive technology is required to accomplish those tasks.

5. **The IEP team gathers and analyzes data about the student, customary environments, educational goals, and tasks when considering a student's need for assistive technology devices and services.**

   Intent: The IEP team shares and discusses information about the student's present levels of achievement in relationship to the environments, and tasks to determine if the student requires assistive technology devices and services to participate actively, work on expected tasks, and make progress toward mastery of educational goals

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6. **When assistive technology is needed, the IEP team explores a range of assistive technology devices, services, and other supports that address identified needs.**

   Intent: The IEP team considers various supports and services that address the educational needs of the student and may include no tech, low tech, mid-tech and/or high tech solutions and devices. IEP team members do not limit their thinking to only those devices and services currently available within the district.

7. **The assistive technology consideration process and results are documented in the IEP and include a rationale for the decision and supporting evidence.**

   Intent: Even though IEP documentation may include a checkbox verifying that assistive technology has been considered, the reasons for the decisions and recommendations should be clearly stated. Supporting evidence may include the results of assistive technology assessments, data from device trials, differences in achievement with and without assistive technology, student preferences for competing devices, and teacher observations, among others.

COMMON ERRORS:

1. AT is considered for students with severe disabilities only.
2. No one on the IEP team is knowledgeable regarding AT.
3. Team does not use a consistent process based on data about the student, environment and tasks to make decisions.
4. Consideration of AT is limited to those items that are familiar to team members or are available in the district.
5. Team members fail to consider access to the curriculum and IEP goals in determining if AT is required in order for the student to receive FAPE.
6. If AT is not needed, team fails to document the basis of its decisions.

* Data indicates that this item is important, however additional dimension added during revision may require revalidation.

Quality Indicators for Assessment of Assistive Technology Needs

Quality Indicators for Assessment of Assistive Technology Needs is a process conducted by a team, used to identify tools and strategies to address a student's specific need(s). The issues that lead to an AT assessment may be very simple and quickly answered or more complex and challenging. Assessment takes place when these issues are beyond the scope of the problem solving that occurs as a part of normal service delivery.

1. **Procedures for all aspects of assistive technology assessment are clearly defined and consistently applied.**

   Intent: Throughout the educational agency, personnel are well informed and trained about assessment procedures and how to initiate them. There is consistency throughout the agency in the conducting of assistive technology assessments. Procedures may include– but are not limited to– initiating an assessment, planning and conducting an assessment, conducting trials, reporting results, and resolving conflicts.

2. **Assistive technology assessments are conducted by a team with the collective knowledge and skills needed to determine possible assistive technology solutions that address the needs and abilities of the student, demands of the customary environments, educational goals, and related activities.**

   Intent: Team membership is flexible and varies according to the knowledge and skills needed to address student needs. The student and family are active team members. Various team members bring different information and strengths to the assessment process.

3. **All assistive technology assessments include a functional assessment in the student's customary environments, such as the classroom, lunchroom, playground, home, community setting, or work place.**

   Intent: The assessment process includes activities that occur in the student's current or anticipated environments because characteristics and demands in each may vary. Team members work together to gather specific data and relevant information in identified environments to contribute to assessment decisions.

4. **Assistive technology assessments, including needed trials, are completed within reasonable time lines.**

   Intent: Assessments are initiated in a timely fashion and proceed according to a timeline that the IEP team determines to be reasonable based on the complexity of student needs and assessment questions. Timelines comply with applicable state and agency requirements.

5. **Recommendations from assistive technology assessments are based on data about the student, environments and tasks.**

   Intent: The assessment includes information about the student's needs and abilities, demands of various environments, educational tasks, and objectives. Data may be gathered from sources such as student performance records, results of experimental trials, direct observation, interviews with students or significant others, and anecdotal records.

*6. **The assessment provides the IEP team with clearly documented recommendations that guide decisions about the selection, acquisition, and use of assistive technology devices and services.**

   Intent: A written rationale is provided for any recommendations that are made. Recommendations may include assessment activities and results, suggested devices and alternative ways of addressing needs, services required by the student and others, and suggested strategies for implementation and use.

7. **Assistive technology needs are reassessed any time changes in the student, the environments and/or the tasks result in the student's needs not being met with current devices and/or services.**

   Intent: An assistive technology assessment is available any time it is needed due to changes that have affected the student. The assessment can be requested by the parent or any other member of the IEP team.

COMMON ERRORS

1. Procedures for conducting AT assessment are not defined, or are not customized to meet the student's needs.
2. A team approach to assessment is not utilized.
3. Individuals participating in an assessment do not have the skills necessary to conduct the assessment, and do not seek additional help.
4. Team members do not have adequate time to conduct assessment processes, including necessary trials with AT.
5. Communication between team members is not clear.
6. The student is not involved in the assessment process.
7. When the assessment is conducted by any team other than the student's IEP team, the needs of the student or expectations for the assessment are not communicated.

* Research indicates that this item is important, however additional dimension added during revision may require revalidation.

Quality Indicators for Including Assistive Technology in the IEP

The Individuals with Disabilities education Act of 1997 (IDEA '97) requires that the IEP team consider AT needs in the development of every Individualized Education Program (IEP). Once the IEP team has reviewed assessment results and determined that AT is needed for provision of a free, appropriate, public education (FAPE), it is important that the IEP document reflects the team's determination in as clear a fashion as possible. The Quality Indicators for AT in the IEP help the team describe the role of AT in the child's educational program.

***1. The education agency has guidelines for documenting assistive technology needs in the IEP and requires their consistent application.**

Intent: The education agency provides guidance to IEP teams about how to effectively document assistive technology needs, devices, and services as a part of specially designed instruction. related services, or supplementary aids and services

2. All services that the IEP team determines are needed to support the selection, acquisition, and use of assistive technology devices are designated in the IEP.

Intent: The provision of assistive technology services is critical to the effective use of assistive technology devices. It is important that the IEP describes the assistive technology services that are needed for student success. Such services may include evaluation, customization or maintenance of devices, coordination of services, and training for the student and family and professionals, among others.

3. The IEP illustrates that assistive technology is a tool to support achievement of goals and progress in the general curriculum by establishing a clear relationship between student needs, assistive technology devices and services, and the student's goals and objectives.

Intent: Most goals are developed before decisions about assistive technology are made. However, this does not preclude the development of additional goals, especially those related specifically to the appropriate use of assistive technology.

4. IEP content regarding assistive technology use is written in language that describes how assistive technology contributes to achievement of measurable and observable outcomes.

Intent: Content which describes measurable and observable outcomes for assistive technology use enables the IEP team to review the student's progress and determine whether the assistive technology has had the expected impact on student participation and achievement.

5. **Assistive technology is included in the IEP in a manner that provides a clear and complete description of the devices and services to be provided and used to address student needs and achieve expected results.**

   Intent: IEPs are written so that participants in the IEP meeting and others who use the information to implement the student's program understand what technology is to be available, how it is to be used, and under what circumstances. "Jargon" should be avoided.

COMMON ERRORS:

1. IEP teams do not know how to include AT in IEPs.
2. IEPs including AT use a "formula" approach to documentation. All IEPs are developed in similar fashion and the unique needs of the child are not addressed.
3. AT is included in the IEP, but the relationship to goals and objectives is unclear.
4. AT devices are included in the IEP, but no AT services support the use.
5. AT expected results are not measurable or observable.

Quality Indicators for Assistive Technology Implementation

Assistive technology implementation pertains to the ways that assistive technology devices and services, as included in the IEP (including goals/objectives, related services, supplementary aids and services and accommodations or modifications) are delivered and integrated into the student's educational program. Assistive technology implementation involves people working together to support the student using assistive technology to accomplish expected tasks necessary for active participation and progress in customary educational environments.

1. **Assistive technology implementation proceeds according to a collaboratively developed plan.**

   Intent: Following IEP development, all those involved in implementation work together to develop a written action plan that provides detailed information about how the AT will be used in specific educational settings, what will be done and who will do it.

2. **Assistive technology is integrated into the curriculum and daily activities of the student across environments.**

   Intent: Assistive technology is used when and where it is needed to facilitate the student's access to, and mastery of, the curriculum. Assistive technology may facilitate active participation in educational activities, assessments, extracurricular activities, and typical routines.

3. **Persons supporting the student across all environments in which the assistive technology is expected to be used share responsibility for implementation of the plan.**

   Intent: All persons who work with the student know their roles and responsibilities, are able to support the student using assistive technology, and are expected to do so.

4. **Persons supporting the student provide opportunities for the student to use a variety of strategies–including assistive technology– and to learn which strategies are most effective for particular circumstances and tasks.**

   Intent: When and where appropriate, students are encouraged to consider and use alternative strategies to remove barriers to participation or performance. Strategies may include the student's natural abilities, use of assistive technology, other supports, or modifications to the curriculum, task or environment.

5. **Training for the student, family and staff are an integral part of implementation.**

   Intent: Determination of the training needs of the student, staff, and family is based on how the assistive technology will be used in each unique environment. Training and technical assistance are planned and implemented as ongoing processes based on current and changing needs.

6. Assistive technology implementation is initially based on assessment data and is adjusted based on performance data.

Intent: Formal and informal assessment data guide initial decision-making and planning for AT implementation. As the plan is carried out, student performance is monitored and implementation is adjusted in a timely manner to support student progress.

7. Assistive technology implementation includes management and maintenance of equipment and materials.

Intent: For technology to be useful it is important that equipment management responsibilities are clearly defined and assigned. Though specifics may differ based on the technology, some general areas may include organization of equipment and materials; responsibility for acquisition, set-up, repair, and replacement in a timely fashion; and assurance that equipment is operational.

COMMON ERRORS

1. Implementation is expected to be smooth and effective without addressing specific components in a plan. Team members assume that everyone understands what needs to happen and knows what to do.
2. Plans for implementation are created and carried out by one IEP team member.
3. The team focuses on device acquisition and does not discuss implementation.
4. An implementation plan is developed that is incompatible with the instructional environments.
5. No one takes responsibility for the care and maintenance of AT devices and so they are not available or in working order when needed.
6. Contingency plans for dealing with broken or lost devices are not made in advance.

Quality Indicators for Evaluation of the Effectiveness of Assistive Technology

This area addresses the evaluation of the effectiveness of the AT devices and services that are provided to individual students. It includes data collection, documentation and analysis to monitor changes in student performance resulting from the implementation of assistive technology services. Student performance is reviewed in order to identify if, when, or where modifications and revisions to the implementation are needed.

1. **Team members share clearly defined responsibilities to ensure that data are collected, evaluated, and interpreted by capable and credible team members.**

   Intent: Each team member is accountable for ensuring that the data collection process determined by the team is implemented. Individual roles in the collection and review of the data are assigned by the team. Data collection, evaluation, and interpretation are led by persons with relevant training and knowledge. It can be appropriate for different individual team members to conduct these tasks.

2. **Data are collected on specific student achievement that has been identified by the team and is related to one or more goals.**

   Intent: In order to evaluate the success of assistive technology use, data are collected on various aspects of student performance and achievement. Targets for data collection include the student's use of assistive technology to progress toward mastery of relevant IEP and curricular goals and to enhance participation in extracurricular activities at school and in other environments.

3. **Evaluation of effectiveness includes the quantitative and qualitative measurement of changes in the student's performance and achievement.**

   Intent: Changes targeted for data collection are observable and measurable, so that data are as objective as possible. Changes identified by the IEP team for evaluation may include accomplishment of relevant tasks, how assistive technology is used, student preferences, productivity, participation, and independence, quality of work, speed and accuracy of performance, and student satisfaction, among others.

4. **Effectiveness is evaluated across environments during naturally occurring and structured activities.**

   Intent: Relevant tasks within each environment where the assistive technology is to be used are identified. Data needed and procedures for collecting those data in each environment are determined.

5. **Data are collected to provide teams with a means for analyzing student achievement and identifying supports and barriers that influence assistive technology use to determine what changes, if any, are needed.**

   Intent: Teams regularly analyze data on multiple factors that may influence success or lead to errors in order to guide decision-making. Such factors include not only the student's understanding of expected tasks and ability to use assistive technology but also student preferences, intervention strategies, training, and opportunities to gain proficiency.

6. **Changes are made in the student's assistive technology services and educational program when evaluation data indicate that such changes are needed to improve student achievement.**

   Intent: During the process of reviewing evaluation data, the team decides whether changes or modifications need to be made in the assistive technology, expected tasks, or factors within the environment. The team acts on those decisions and supports their implementation.

7. **Evaluation of effectiveness is a dynamic, responsive, ongoing process that is reviewed periodically.**

   Intent: Scheduled data collection occurs over time and changes in response to both expected and unexpected results. Data collection reflects measurement strategies appropriate to the individual student's needs. Team members evaluate and interpret data during periodic progress reviews.

COMMON ERRORS:

1. An observable, measurable student behavior is not specified as a target for change.
2. Team members do not share responsibility for evaluation of effectiveness.
3. An environmentally appropriate means of data collection and strategies has not been identified.
4. A schedule of program review for possible modification is not determined before implementation begins.

Quality Indicators for Assistive Technology Transition

(NEW AREA, 2003 – NOT INCLUDED IN VALIDATION STUDY)

Transition plans for students who use assistive technology address the ways the student's use of assistive technology devices and services are transferred from one setting to another. Assistive technology transition involves people from different classrooms, programs, buildings, or agencies working together to ensure continuity. Self-advocacy, advocacy and implementation are critical issues for transition planning.

1. **Transition plans address assistive technology needs of the student, including roles and training needs of team members, subsequent steps in assistive technology use, and follow-up after transition takes place.**

   Intent: The transition plan assists the receiving agency/team to successfully provide needed supports for the AT user. This involves the assignment of responsibilities and the establishment of accountability.

2. **Transition planning empowers the student using assistive technology to participate in the transition planning at a level appropriate to age and ability.**

   Intent: Specific self-determination skills are taught that enable the student to gradually assume responsibility for participation and leadership in AT transition planning as capacity develops. AT tools are provided, as needed, to support the student's participation.

3. **Advocacy related to assistive technology use is recognized as critical and planned for by the teams involved in transition.**

   Intent: Everyone involved in transition advocates for the student's progress, including the student's use of AT. Specific advocacy tasks related to AT use are addressed and may be carried out by the student, the family, staff members or a representative.

4. **AT requirements in the receiving environment are identified during the transition planning process.**

   Intent: Environmental requirements, skill demands and needed AT support are determined in order to plan appropriately. This determination is made collaboratively and with active participation by representatives from sending and receiving environments.

5. **Transition planning for students using assistive technology proceeds according to an individualized timeline.**

   Intent: Transition planning timelines are adjusted based on specific needs of the student and differences in environments. Timelines address well mapped action steps with specific target dates and ongoing opportunities for reassessment.

6. **Transition plans address specific equipment, training and funding issues such as transfer or acquisition of assistive technology, manuals and support documents.**

   Intent: A plan is developed to ensure that the AT equipment, hardware, and/or software arrives in working condition accompanied by any needed manuals. Provisions for ongoing maintenance and technical support are included in the plan.

COMMON ERRORS:

1. Lack of self-determination, self-awareness and self-advocacy on part of the individual with a disability (and/or advocate).
2. Lack of adequate long range planning on part of sending and receiving agencies (timelines).
3. Inadequate communication and coordination.
4. Failure to address funding responsibility.
5. Inadequate evaluation (documentation, data, communication, valued across settings) process.
6. Philosophical differences between sending and receiving agencies.
7. Lack of understanding of the law and of their own responsibilities.

Quality Indicators for Administrative Support of Assistive Technology Services

This area defines the critical areas of administrative support and leadership for developing and delivering assistive technology services. It involves the development of policies, procedures, and other supports necessary to sustain effective assistive technology programs.

1. **The education agency has written procedural guidelines that ensure equitable access to assistive technology devices and services for students with disabilities, if required for a free, appropriate, public education (FAPE).**

   Intent: Clearly written procedural guidelines help ensure that students with disabilities have the assistive technology devices and services they require for educational participation and benefit. Access to assistive technology is ensured regardless of severity of disability, educational placement, geographic location, or economic status.

2. **Quality Indicator: The education agency broadly disseminates clearly defined procedures for accessing and providing assistive technology services and supports the implementation of those guidelines.**

   Intent: Procedures are readily available in multiple formats to families and school personnel in special and general education. All are aware of how to locate the procedures and are expected to follow procedures whenever appropriate.

3. **The education agency includes appropriate assistive technology responsibilities in written descriptions of job requirements for each position in which activities impact assistive technology services.**

   Intent: Appropriate responsibilities and the knowledge, skills, and actions required to fulfill them are specified for positions from the classroom through the central office. These descriptions will vary depending upon the position and may be reflected in a position description, assignment of duty statement, or some other written description.

4. **The education agency employs personnel with the competencies needed to support quality assistive technology services within their primary areas of responsibility at all levels of the organization.**

   Intent: Although different knowledge, skills, and levels of understanding are required for various jobs, all understand and are able to fulfill their parts in developing and maintaining a collaborative system of effective assistive technology services to students.

5. **The education agency includes assistive technology in the technology planning and budgeting process.**

   Intent: A comprehensive, collaboratively developed technology plan provides for the technology needs of all students in general education and special education.

6. **The education agency provides access to <u>on-going learning opportunities about assistive technology</u> for staff, family, and students.**

   <u>Intent:</u> Learning opportunities are based on the needs of the student, the family, and the staff and are readily available to all. Training and technical assistance include any topic pertinent to the selection, acquisition, or use of assistive technology or any other aspect of assistive technology service delivery.

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7. **The education agency uses a <u>systematic process to evaluate</u> all components of the agency-wide assistive technology program.**

   <u>Intent:</u> The components of the evaluation process include, but are not limited to, planning, budgeting, decision-making, delivering AT services to students, and evaluating the impact of AT services on student achievement. There are clear, systematic evaluation procedures that all administrators know about and use on a regular basis at central office and building levels.

<u>COMMON ERRORS:</u>

1. If policies and guidelines are developed, they are not known widely enough to assure equitable application by all IEP teams.
2. It is not clearly understood that the primary purpose of AT in school settings is to support the implementation of the IEP for the provision of a free, appropriate, public education (FAPE).
3. Personnel have been appointed to head AT efforts, but resources to support those efforts have not been allocated. (Time, a budget for devices, professional development, etc.)
4. AT leadership personnel try to or are expected to do all of the AT work and fail to meet expectations.
5. AT services are established but their effectiveness is never evaluated.

Quality Indicators for Professional Development and Training in Assistive Technology

(NEW AREA, 2003 – NOT INCLUDED IN VALIDATION STUDY)

This area defines the critical elements of quality professional development and training in assistive technology. Assistive technology professional development and training efforts should arise out of an ongoing, well-defined, sequential and comprehensive plan. Such a plan can develop and maintain the abilities of individuals at all levels of the organization to participate in the creation and provision of quality AT services. The goal of assistive technology professional development and training is to increase educators' knowledge and skills in a variety of areas including, but not limited to: collaborative processes; a continuum of tools, strategies, and services; resource; legal issues; action planning; and data collection and analysis. Audiences for professional development and training include: students, parents or caregivers, special education teachers, educational assistants, support personnel, general education personnel, administrators, AT specialists, and others involved with students.

1. **Comprehensive assistive technology professional development and training support the understanding that assistive technology devices and services enable students to accomplish IEP goals and objectives and make progress in the general curriculum.**

   Intent: The Individuals with Disabilities Education Act (IDEA) requires the provision of a free and appropriate public education (FAPE) for all children with disabilities. The Individualized Education Plan (IEP) defines FAPE for each student. The use of AT enables students to participate in and benefit from FAPE. The focus of all AT Professional Development and training activities is to increase the student's ability to make progress in the general curriculum and accomplish IEP goals and objectives.

2. **The education agency has an AT professional development and training plan that identifies the audiences, the purposes, the activities, the expected results, evaluation measures and funding for assistive technology professional development and training.**

   Intent: The opportunity to learn the appropriate techniques and strategies is provided for each person involved in the delivery of assistive technology services. Professional development and training are offered at a variety of levels of expertise and are pertinent to individual roles.

3. **The content of comprehensive AT professional development and training addresses all aspects of the selection, acquisition and use of assistive technology.**

   Intent: AT professional development and training address the development of a wide range of assessment, collaboration and implementation skills that enable educators to provide effective AT interventions for students. The AT professional development and training plan includes, but is not limited to: collaborative processes; the continuum of tools, strategies and services; resources; legal issues; action planning; and data collection.

4. **AT professional development and training address and are aligned with other local, state and national professional development initiatives.**

   Intent: Many of the effective practices used in the education of children with disabilities can be enhanced by the use of assistive technology. The functional use of AT is infused into all professional development efforts.

5. **Assistive technology professional development and training include ongoing learning opportunities that utilize local, regional, and/or national resources.**

   Intent: Professional development and training opportunities enable individuals to meet present needs and increase their knowledge of AT for use in future. Training in AT occurs frequently enough to address new and emerging technologies and practices and is available on a repetitive and continuous schedule. A variety of AT professional development and training resources are used.

6. **Professional Development and Training in assistive technology follow research-based models for adult learning that include multiple formats and are delivered at multiple skill levels.**

   Intent: The design of Professional Development and Training for AT recognizes adults as diverse learners who bring various levels of prior knowledge and experience to the training and can benefit from differentiated instruction using a variety of formats and diverse timeframes (e.g., workshops, distance learning, follow-up assistance, ongoing technical support).

7. **The effectiveness of assistive technology professional development and training is evaluated by measuring changes in practice that result in improved student performance.**

   Intent: Evidence is collected regarding the results of AT professional development and training. The professional development and training plan is modified based on these data in order to ensure changes educational practice that result in improved student performance.

COMMON ERRORS:

1. The educational agency does not have a comprehensive plan for ongoing AT professional development and training.
2. The educational agency's plan for professional development and training is not based on AT needs assessment and goals.
3. Outcomes for professional development are not clearly defined and effectiveness is not measured in terms of practice and student performance.
4. A continuum of ongoing professional development and training is not available.
5. Professional development and training focuses on the tools and not the process related to determining student needs and integrating technology into the curriculum.
6. Professional development and training is provided for special educators but not for administrators, general educators and instructional technology staff.

"10 Things Everyone Needs to Know about Assistive Technology in Schools in 2005"

Joy Smiley Zabala, Ed.D. , ATP

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1) Assistive Technology is essentially a legal term.	Assistive Technology Device *(a)any item, piece of equipment or product system… that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.* (b) *EXCEPTION: The term does not include a medical device that is surgically implanted , or the replacement of such device.* Public Law 108-446 Section 602(1) Assistive Technology Service *any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.* Public Law 108-446 Section 602(1) AT can come from ANY category - Assistive Technology - Instructional Technology - Universally Designed Technology - Universally Designed Instruction (UDL)
2) The primary purpose of Assistive Technology is the enhancement of capabilities and the removal of barriers to achievement.	The Individuals with Disabilities Education Act, Amendments of 1997 - IDEA ensures FAPE - FAPE is defined by the IEP - AT required to implement the IEP and support educational achievement must be provided at no cost to the family.
3) Assistive Technology is related to function, rather than to specific disability categories.	Functional skills for learning include: reading, written expression, math, communication, recreation, daily organization, seating/positioning, hearing, seeing, self-care, mobility, behavior, specific task-related skills, etc.
4) Assistive Technology may be applicable to all disability groups and in all phases of education.	While there may be prerequisites for the use of specific Assistive technology devices, there are not prerequisites for Assistive technology devices and services, per se.

5) Assistive Technology service provision follows a student-centered process that requires a team approach.	TATN Training Modules – http://www.texasat.net TAM Monographs – 3 monographs http://www.tamcec.org/products.htm
6) a) Assessment and intervention form a continuous, dynamic process. **b) Systematic problem analysis and solving are essential.**	The SETT Framework **- http://www.joyzabala.com** - Student, Environments, Tasks, then Tools - The goal of SETT Framework is to help collaborative teams identify student-centered, environmentally-useful, and tasks-focused tool systems that foster the educational achievement of students with disabilities
7) When a team can describe the student, the environments and the tasks, they can describe the tools that are needed to support success!	After building shared knowledge about the student, the environments, and tasks, ask, "If there were something that would help this student, do these tasks in these environments, what would it be like?"
8) The least complex solution that will remove barriers to achievement should be a first consideration.	- View technology is part of a SYSTEM of tools! - Recognize that assistive technology can BE a barrier - Try to determine tool systems that remove more barriers than they create
9) AT does not eliminate the need for instruction in skills pertinent to the tasks. (academic, social, vocational, recreational, or other)	Have a means to do something does not mean that the student knows how to do it. Assistive technology enables students to be actively involved in instruction and other curricular and extra-curricular educational activities. I
10) There are many ways to do it right!	Effective Decision-Making and Good Stewardship - Avoid device abandonment and underutilization - Try before you buy - Plan for implementation - Identify expected change - Evaluate effectiveness - Think Return on Investment (ROI) Quality Indicators for Assistive Technology Services in Schools - QIAT **(http://www.qiat.org)** - Administrative Support - Consideration - Assessment - IEP Development - Implementation - Evaluation of Effectiveness - Transition - Professional Development

new!

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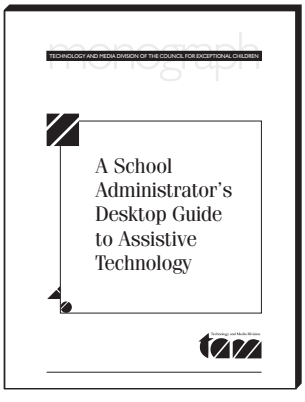

Written by national experts Gayl Bowser and Penny Reed, this, handy, easy-to-read practical guide:

- Provides an overview of assistive technology services.
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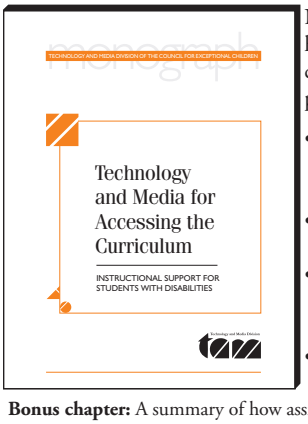


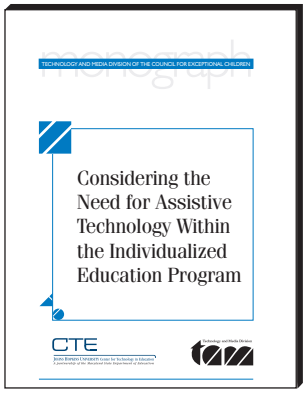
National experts offer practical ideas to help students with disabilities access the curriculum. Discover technology-based practices for:

- Teaching history, and enhancing literacy and written language in inclusive classrooms.
- Understanding students' behavioral problems.
- Helping young children with disabilities participate in daily activities.
- Developing functional skills.

Bonus chapter: A summary of how assistive technology is addressed in the reauthorized IDEA (2004)! [*Note:* Chapters contained in the monograph were first published as issues in *TAM Technology in Action*, Volume 1.]

Price: $18.00 plus s/h

Considering the Need for Assistive Technology Within the Individualized Education Program



Written by national experts and practitioners— John Castellani, Penny Reed, Joy Zabala, Jeanne Dwyer, Sarah McPherson, and Judy Rein—this monograph is a must for IEP teams as they consider assistive technology for students with disabilities. The monograph features:

- Essential information on the reauthorized IDEA (2004).
- A process for considering assistive technology as part of the IEP process.
- Questions and answers about using assistive technology in school settings, and resources for more information.

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"The desktop guide is principal-friendly. I feel more competent and confident with this guide on my desk."

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"It delights me when I visit a classroom and see the AT Quick Wheel on the teacher's desk, and the teacher says, 'I looked at the wheel and this looked like a good solution, so we implemented it.'"

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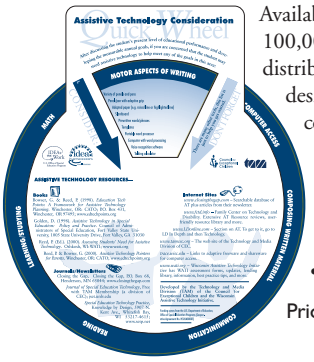
Technology and Media Division of the Council for Exceptional Children

TAM is the official division of the Council for Exceptional Children that works to promote the availability and effective use of technology and media for individuals with disabilities. As a member of TAM, you stay abreast of recent advances and trends through the following publications:

- *Journal of Special Education Technology*—The premiere journal in the field, featuring research and information on new technologies, exemplary practices, and relevant issues.
- *TAM Connector*—The newsletter keeps you informed of upcoming events, national legislation, and much, much more!
- *TAM Technology in Action*—Information on using assistive and instructional technology tailored for practitioners.

Assistive Technology Consideration Quick Wheel



Available while supplies last! More than 100,000 copies of this tool have been distributed nationwide. Specifically designed to help IEP teams as they consider the student's need for assistive technology, the wheel:

- Presents valuable information about assistive technology in an easy-to-understand format.
- Provides useful resources.

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Journal of Special Education Technology (JSET)

JSET is a refereed professional journal that presents current information and opinions on issues, research, policy, and practice related to the use of technology in the field of special education. Published quarterly—free to TAM members! Subscription rates:

- Individual domestic mail—$40.00 annually.
- Institutional or foreign mail—$89.00 annually.

[*Note*: Prices subject to change without notice.]

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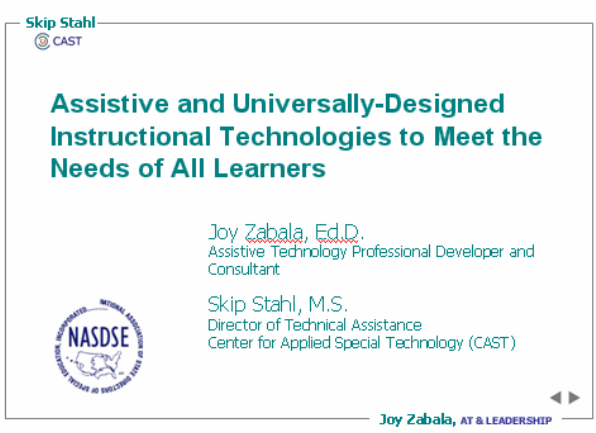

References and Resources –

Assistive Technology & Universal Design for Learning

Rose, David H., Hasselbring, Ted S., Stahl, Skip and Zabala, Joy. Assistive Technology and Universal Design for Learning: Two Sides of the Same Coin, In D. Edyburn, K. Higgins, R. Boone (Eds), Handbook of Special Education Technology Research and Practice. Knowledge by Design, Inc., 2004 http://www.knowledge-by-design.com/

Methods

Teaching Every Student/The Life Cycle of Plants (Grade 1) - Kirsten, a first grade teacher in Boston, MA, used this UDL lesson as part of her unit to teach the life cycle of plants in two forty-five minute sessions. Her class includes 21 students of diverse abilities including some students with identified learning disabilities, several students who receive extra literacy support, and one English Language Learner.
http://www.cast.org/teachingeverystudent/toolkits/tk_modellesson.cfm?tk_id=21&tkl_id=141

Assessment

"Universally-Designed Assessments", National Center for Educational Outcomes,
http://education.umn.edu/NCEO/TopicAreas/UnivDesign/UnivDesign_topic.htm

Dolan, R. P., Hall, T. E., Banerjee, M., Chun, E., & Strangman, N. (2005). **Applying principles of universal design to test delivery: The effect of computer-based read-aloud on test performance of high school students with learning disabilities.** Journal of Technology, Learning, and Assessment, 3(7). Available at http://www.jtla.org/

National Instructional Materials Accessibility Standard –
http://NIMAS.cast.org

Online Resources

CAST Master Reference: http://www.cast.org/pd/initiatives/masterref.html

Georgia Project for Assistive Technology (GPAT): Information and forms, including video-linked consideration guide. http://www.gpat.org

Quality Indicators for Assistive Technology Services in Schools (QIAT): Includes QIAT documents and the QIAT List - http://www.qiat.org

SETT Framework Information: http://www.joyzabala.com

Technology and Media Division of the Council for Exceptional Children Information, conferences, monographs, and AT Wheel: http://www.tamcec.org

Texas Assistive Technology Network (TATN): Training modules for Administrators, Consideration, Assessment, and Technology Integration (free of charge) http://www.texasat.net

Wisconsin Assistive Technology Initiative (WATI): Information and Forms
http://www.wati.org

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